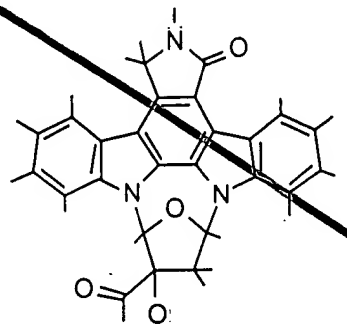
wherein X is S or O, in the presence of a Bronsted acid or a Lewis acid to produce a glycosylated product having the ring structure



REMARKS

Claims 1, 3, 4, 5, 8 to 17 and 19 to 24 were pending in this application prior to entry of the above amendments. Claims 1, 13, and 17 are amended. Allowance of the amended claims is requested in view of these remarks.

As summarized in the Supplementary Amendment filed 9 August 1992, this invention claims a new, carbenoic-mediated synthesis of furanosylated indolocarbazoles, which differs from earlier suggested cycloaromatization, double nitrene C-H insertion, nitrene C-H insertion, and maleimide reduction schemes employed to prepare the same compounds. The unique process of the invention involves fewer synthetic steps, and provides biologically important enantiomers in high yields.

Claims 1, 3 to 5, 10, 13 to 17, and 20 to 24 were rejected under 35 U.S.C. s 112, first paragraph, as containing subject matter not sufficiently described in the specification in such a way as to reasonably convey to those in the relevant art that the inventor had possession of the claimed invention. The rejection is respectfully

traversed. As pointed out last August in the Supplementary Amendment and the Declaration accompanying it, as well as in a Declaration filed 10 August 1998 in the file wrapper of parent case U.S. Ser. No. 08/817, this is a process case describing an improved synthesis of furanosylated indolocarbazoles such as those depicted in claim 12, but the approach can be used for analogous compounds. The alkaloid chemistry disclosed in the application and claimed is a very circumscribed, sophisticated field of organic chemistry, and the level of skill of practitioners in the art is correspondingly high. What is necessary for the practice of the invention is instructions for preparation of the compounds following the carbenoid-mediated approach disclosed using standard chemical techniques. The synthesis was fully disclosed in the paper, the provisional, and this application and its parents. This is why the originally presented R group description crafted by an expert in the field, Dr. Wood, used generalized terminology. Dr. Wood was writing to his colleagues, and knowledge of one skilled in the art must be presupposed in reading the claims.

To clarify features of the claimed glycosylated product, and the acetal, diazo, and biindole reactants employed to synthesized the product, claims 1, 13, and 17 have been amended to set out the ring structures presented in the original claims. Applicant submits that the word description accompanied by structural depictions amply describes the invention to those skilled in the art when read with the specification and the papers cited therein.

The same claims were rejected under under 35 U.S.C. § 112, second paragraph, as being indefinite in the recitation of "glycosylated product". The rejection is respectfully traversed. The process is directed to the preparation of fuanosylated indolocarbazoles, not any glycosylated product. The claims clearly state this. And the claims as amended illustrate the ring structure of the glycosylated products produced by the process. Applicant believes this alone should render the rejection moot. Moreover, the same language was employed in the issued parent, and so, for U.S.P.T.O.

consistency, it should be retained. Withdrawal of the objection to the terminology is therefore respectfully requested.

Applicants submit that these amendments and remarks put this application in condition for allowance, and request early and favorable consideration. If the undersigned can advance the prosecution of this application in any way, the Examiner is invited to call at the number listed below.

Respectfully submitted,

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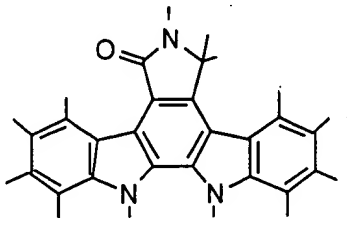
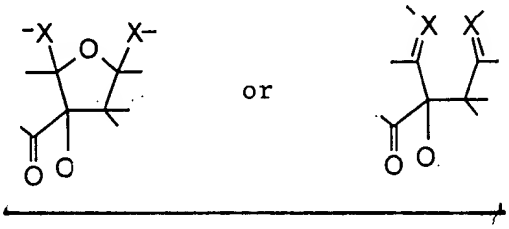
79 Trumbull Street
New Haven, CT 06511-3708
203-773-9544

Marked Up Version of Amendments Required by 37 C.F.R. § 1.121

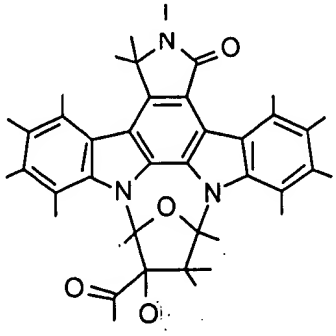
1 (Thrice Amended). A process for the preparation of furanosylated indolocarbazoles by reacting an indolocarbazole having the ring structure



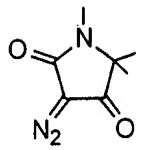
with an acetal having the ring structure



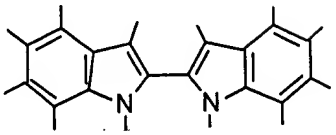
wherein X is S or O, under conditions that promote acetal exchange or formation to produce a glycosylated product having the ring structure



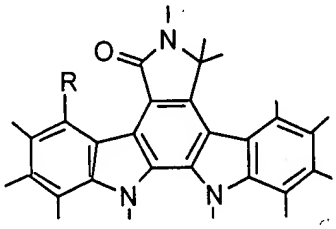
13 (Twice Amended). A process according to claim 1 wherein the indolocarbazole is prepared by reacting a diazo compound having the ring structure



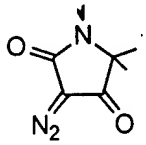
with a biindole having the ring structure



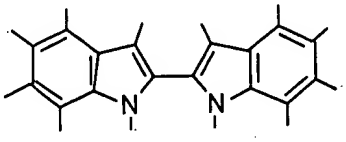
17 (Thrice Amended). A process for the preparation of furanosylated indolocarbazoles by reacting an indolocarbazole having the ring structure



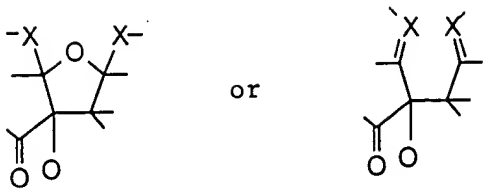
by reacting a diazo compound having the ring structure



with a biindole having the ring structure



in the presence of a transition metal catalyst in a solvent capable of solvating the reactants, and then reacting the indolocarbazole with an acetal having the ring structure



wherein X is S or O, in the presence of a Bronsted acid or a Lewis acid to produce a glycosylated product having the ring structure